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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------------|-------------------------------|------------------------|
| 10/520,914 | 07/01/2005 | Jim Aloysius Maria Brandts | 4811 | 5222 |
| 7590 01/10/2008 Gregory Turocy Amin & Turocy 24th Floor National City Center 1900 East 9th Street Cleveland, OH 44114 | | | EXAMINER HRUSKOCI, PETER A | |
| | | | ART UNIT 1797 | PAPER NUMBER |
| | | | MAIL DATE 01/10/2008 | DELIVERY MODE PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/520,914 | BRANDTS ET AL. | |
| | Examiner | Art Unit | |
| | Peter A. Hruskoci | 1797 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2008 and 01 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

The disclosure is objected to because of the following informalities: In the specification on page 8 the formulas of the precursor complexes should include a description of R, Me, DuPHOS, COD, BINAP, Net, binaphtyl, Ac, and PPh.

Appropriate correction is required.

Claims 4, 5, 7, 8, 10, 11, 13, 15, 21, and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claims 4 and 5 "the amount" lacks clear antecedent basis. In claims 7 and 22 "insoluable" and "separating are erroneous and should be changed to – insoluble -, and - separating -, respectively. In claims 8, 13, and 21 "preferably", in claim 10 "such as", in claim 11 "Keggin type", and in claim 15 "R", "Me", "DuPHOS", "COD", "BINAP", "Net", "binaphtyl", "Ac", and "PPh", are vague and indefinite because it is unclear how these terms further limit the claims.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 2, 4-7, and 11-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lefevre et al. 3,485,763 in view of SU1036775A Nichkova et al. Lefevre et al. disclose (see col. 1 line 30 through col. 2 line 32, and col. 4 lines 15-57) a process for separating metal components from a mixture substantially as claimed. The claims differ from Lefevre et al. by reciting that the contacting produces a precipitate comprising the heteropoly acid and metal component. Nichkova et al. disclose (see Abstract) that it is known in the art to contact heavy

metals with heteropoly acid salts, to aid in forming a precipitate containing heavy metals in a solution. It would have been obvious to one skilled in the art to modify the process of Lefevre et al. by producing the recited precipitate in view of the teachings of Nichkova et al., to aid in separating metal components from the mixture. The specific amounts, and structure of the support material utilized, would have been an obvious matter of process optimization to one skilled in the art, depending on the specific mixture treated and results desired, absent a sufficient showing of unexpected results.

Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lefevre et al. 3,485,763 in view of SU1036775A Nichkova et al. as above, and further in view of Blasius et al. 4,460,474. The claims differ from the references as applied above by reciting that the support material is insoluble oxide or organic support. Blasius et al. disclose (see col. 4 lines 23-56) that it is known in the art to utilize a solid adduct of crown ethers and heteropoly acids on a aluminum carrier or support material, to aid in removing cesium ions from a solution. It would have been obvious to one skilled in the art to modify the references as applied above by utilizing the recited support material in view of the teachings of Blasius et al., to aid in contacting the heteropoly acid with the mixture.

Claims 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts et al. 4,413,118 in view of Nevitt 4,677,085 and SU1036775A Nichkova et al. Roberts et al. disclose (see col. 1 line 7 through col. 2 line 46) a process for separating a homogeneous metal catalyst from a process stream or reaction mixture by forming an insoluble complex with the metal catalyst substantially as claimed. The claims differ from Roberts et al. by reciting that mixture is contacted with a heteropoly acid, and the contacting produces a precipitate comprising

the heteropolyacid and metal component. Nevitt disclose (see col. 1 lines 37-44) that it is known in the art to contact spent catalyst with heteropoly acids, to aid in regenerating the spent catalyst. Nichkova et al. disclose (see Abstract) that it is known in the art to contact heavy metals with heteropoly acid salts, to aid in forming a precipitate containing heavy metals in a solution. It would have been obvious to one skilled in the art to modify the process of Roberts et al. by utilizing the recite heteropoly acid, and producing the recited precipitate in view of the teachings of Nevit and Nichkova et al. respectively, to aid in separating metal components from the mixture.

Claims 3, 20, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Roberts et al. 3,485,763 in view of Nevitt 4,677,085 and SU1036775A Nichkova et al. as above, and further in view of Lefevre et al. 3,485,763 or Blasius et al. 4,460,474. The claims differ from the references as applied above by reciting that the heteropoly acid is anchored or attached to a support material. Lefevre et al. disclose (see col. 1 line 30 through col. 2 line 32, and col. 4 lines 15-57) that it is known in the art to incorporate heteropoly acids on zirconium phosphate particles or support material, to aid in removing cesium and rubidium ions from solutions. Blasius et al. disclose (see col. 4 lines 23-56) that it is known in the art to utilize a solid adduct of crown ethers and heteropoly acids on a aluminum carrier or support material, to aid in removing cesium ions from a solution. It would have been obvious to one skilled in the art to modify the references as applied above by utilizing the recited support material in view of the teachings of Lefevre et al. or Blasius et al., to aid in contacting the heteropoly acid with the mixture.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter A. Hruskoci whose telephone number is (571) 272-1160. The examiner can normally be reached on Monday through Friday from 8:00AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Peter A. Hruskoci
Primary Examiner
Art Unit 1797

1/7/08